

In the Claims

1. (Currently amended) A method for coordinating multiple instances of the same software program residing on a single machine comprising a TCP/IP stack, comprising the steps of:

automatically electing one of said software instances as a supervisor program, thereby designating the remainder of said software instances as subordinate programs;

establishing communication connections between said supervisor program and each of said subordinate programs; and

coordinating all of said software instances by having said supervisor program monitor and control all operations of said subordinate programs which require coordination via said communication connections;

wherein automatically electing one of said software instances as a supervisor program comprises:

having each software instance establish a TCP socket;

having each software instance attempt to create a binding between its TCP socket and a supervisor port number of said TCP/IP stack; and

designating the software instance which succeeds in creating said binding as said supervisor program.

2. (Canceled)

3. (Currently amended) The method as set forth in claim 2 1 wherein coordinating all of said software instances by having said supervisor program monitor and control all operations of said subordinate programs which require coordination via said communication connections comprises ~~said coordination includes~~ detection of failure of any of said software instances, and wherein:

~~said step of establishing communication connections~~ establishing communication connections between said supervisor program and each of said subordinate programs comprises ~~at least the step of~~ having each of said subordinate programs establish a TCP connection to the supervisor program; and

~~said detection of failure of any of said software instances~~ ~~detection of failure~~ comprises ~~the step of~~ having said TCP/IP stack monitor all of said TCP connections, wherein if one of said subordinate programs fails, the supervisor is notified of the failure via the TCP connection established between said one of said subordinate programs and said supervisor program.

4. (Currently amended) The method as set forth in claim 2 1 wherein ~~said coordination includes~~ coordinating all of said software instances by having said supervisor program monitor and control all operations of said subordinate programs which require coordination via said communication connections comprises detection of failure of any of said software instances, and wherein:

~~said step of establishing communication connections~~ establishing communication

connections between said supervisor program and each of said subordinate programs

~~comprises at least the step of~~ having each of said subordinate programs establish a TCP connection to the supervisor program; and

~~said detection of failure~~ detection of failure of any of said software instances comprises ~~the step of~~ having said TCP/IP stack monitor all of said TCP connections, wherein if said supervisor programs fails, each of said subordinate programs is notified of the failure via the TCP connection established between said one of said subordinate programs and said supervisor program.

5. (Currently amended) The method as set forth in claim 4, wherein if each of said subordinate programs is notified of the failure of said supervisor program, said subordinate programs so notified immediately repeat ~~said electing step~~ automatically electing one of said software instances as a supervisor program to elect a new supervisor program and designate a new set of subordinate programs.

6. (Currently amended) The method as set forth in claim 1, further comprising ~~the step of~~ creating a registry, within the supervisor process, containing a unique entry for each software instance residing on said machine.

7. (Currently amended) A computer readable program product for coordinating multiple instances of the same software program residing on a single machine comprising a

TCP/IP stack, said computer program product comprising:

a computer readable storage medium having computer readable code embodied in said medium, said computer readable code comprising:

computer instructions for automatically electing one of said software instances as a supervisor program, thereby designating the remainder of said software instances as subordinate programs;

computer instructions for establishing communication connections between said supervisor program and each of said subordinate programs; and

computer instructions for coordinating all of said software instances by having said supervisor program monitor and control all operations of said subordinate programs which require coordination via said communication connections;

wherein said computer instructions for electing one of said software instances as a supervisor program comprises:

computer instructions causing each software instance to establish a TCP socket;

computer instructions causing each software instance to attempt to create a binding between its TCP socket and a supervisor port number of said TCP/IP stack; and

computer instructions for designating the software instance which succeeds in creating said binding as said supervisor program.

8. (Canceled)

9. (Currently amended) The computer readable program product as set forth in claim 8 ~~7~~ wherein said ~~coordination includes~~ computer instructions for coordinating all of said software instances by having said supervisor program monitor and control all operations of said subordinate programs which require coordination via said communication connections comprises computer instructions for detection of failure of any of said software instances, and wherein:

said computer instructions for establishing communication connections comprises at least computer instructions causing each of said subordinate programs to establish a TCP connection to the supervisor program; and

said computer program product ~~includes~~ comprises computer instructions for ~~detection instructions~~ causing said TCP/IP stack to monitor all of said TCP connections, wherein if one of said subordinate programs fails, the supervisor is notified of the failure via the TCP connection established between said one of said subordinate programs and said supervisor program.

10. (Currently amended) The computer readable program product as set forth in claim 8 ~~7~~ wherein said ~~coordination includes~~ computer instructions for coordinating all of said software instances by having said supervisor program monitor and control all operations of said subordinate programs which require coordination via said communication connections comprises computer instructions for detection of failure of any of said software instances, and wherein:

said computer instructions for establishing communication connections comprises at least computer instructions causing each of said subordinate programs to establish a TCP connection to the supervisor program; and

said computer program product ~~includes detection instructions~~ comprises computer instructions for causing said TCP/IP stack to monitor all of said TCP connections, wherein if said supervisor programs fails, each of said subordinate programs is notified of the failure via the TCP connection established between said one of said subordinate programs and said supervisor program.

11. (Currently amended) The computer readable program product as set forth in claim 10, wherein said computer program product ~~includes~~ comprises computer instructions which, if each of said subordinate programs is notified of the failure of said supervisor program, causes said subordinate programs so notified to immediately repeat said ~~electing step~~ computer instructions for automatically electing one of said software instances as a supervisor program to elect a new supervisor program and designate a new set of subordinate programs.

12. (Currently amended) The computer readable program product as set forth in claim 7, further comprising computer instructions causing the creation of a registry, within the supervisor process, containing a unique entry for each software instance residing on said machine.

13. (Currently amended) A system for coordinating multiple instances of the same software program residing on a single machine comprising a TCP/IP stack, comprising:

means for automatically electing one of said software instances as a supervisor program, thereby designating the remainder of said software instances as subordinate programs;

means for establishing communication connections between said supervisor program and each of said subordinate programs; and

means for coordinating all of said software instances by having said supervisor program monitor and control all operations of said subordinate programs which require coordination via said communication connections;

wherein said means for electing comprises:

means for causing each software instance to establish a TCP socket;

means for causing each software instance to attempt to create a binding between its TCP socket and a supervisor port number of said TCP/IP stack; and

means for causing the designation of the software instance which succeeds in creating said binding as said supervisor program.

14. (Canceled)

15. (Currently amended) The system as set forth in claim 14 13 wherein said ~~coordination includes~~ means for coordinating comprises means for detection of failure of any

of said software instances, and wherein:

said means for establishing communication connections ~~includes~~comprises means for causing each of said subordinate programs to establish a TCP connection to the supervisor program; and

said means for detection ~~detection means includes~~comprises means for causing said TCP/IP stack to monitor all of said TCP connections, wherein if one of said subordinate programs fails, the supervisor is notified of the failure via the TCP connection established between said one of said subordinate programs and said supervisor program.

16. (Currently amended) The system as set forth in claim 14 13 wherein said ~~coordination includes~~ means for coordinating comprises means for detection of failure of any of said software instances, and wherein:

said means for establishing communication connections ~~includes~~comprises means for causing each of said subordinate programs to establish a TCP connection to the supervisor program; and

said means for detection comprises ~~detection means includes~~ means for causing said TCP/IP stack to monitor all of said TCP connections, wherein if said supervisor programs fails, each of said subordinate programs is notified of the failure via the TCP connection established between said one of said subordinate programs and said supervisor program.



17. (Currently amended) The system as set forth in claim 16, wherein if each of said subordinate programs is notified of the failure of said supervisor program, said subordinate programs so notified immediately repeat said means for automatically electing ~~electing step to~~ elect a new supervisor program and designate a new set of subordinate programs.

18. (Original) The system as set forth in claim 13, further comprising means for creating a registry, within the supervisor process, containing a unique entry for each software instance residing on said machine.